



**National Park Service**

**Inventory and Monitoring Division**

**Requesting GHCN/COOP, SNOTEL, Stream Gage, Snow  
Course and RAWS Stations for Data Acquisition,  
Compilation, Basic Quality Control, and Distribution  
Standard Operating Procedure**

**Revision Date:** July 17, 2012

**Authors:** Brent Frakes

## **Table of Contents**

1.	Introduction .....	3
2.	Obtain CDB_Codes .....	4
2.1.	Web Interface .....	4
2.2.	Query From Database .....	5
3.	Prepare List of CDB Codes .....	6
4.	Submit List of Requested Stations .....	7
5.	Updating the Station Request Status in Database .....	7
5.1.	Steps .....	7
5.1.1.	Open SQL Server Management Studio .....	7
5.1.2.	Clear Station Request.....	8
5.1.3.	Load Data To Staging Table .....	9
6.	Follow Up.....	15

# 1. Introduction

This SOP documents the process for requesting station data from the major climate/weather providers (GHCN/NOAA Cooperative Network Weather Station, SNOTEL snow and weather stations, SnowCourse, and RAWS) and one hydrologic data provider (USGS).

For each requested station, NRSS acquires and permanently stores original data values and associated data quality flags from the entire period of record for the following parameters:

- Daily Minimum Temperature (TMIN)
- Daily Maximum Temperature (TMAX)
- Daily Precipitation (PRCP)
- Daily Snowfall (SNOW)
- Snow depth at observation time (SNWD)
- Snow Water Equivalent (SWE or WESD)
- Mean Daily Discharge

Quarterly, NRSS will automatically replace the entire record set for each requested station. This annual data replacement and refresh process results in the addition of data values from station records for the previous year, and can also result in updated values for the entire period of record for a station. For example, if a provider such as NOAA corrects raw data from five years ago that were previously loaded into the NPS Climate Database, then the annual refresh of data in the NPS Climate Database will include the changed values from five years ago along with the most recently available data.

Data for all stations included in the initial station request are refreshed quarterly in the NPS Climate Database by IMD staff. No additional action is required from the requesting unit unless stations need to be added or removed from the initial request. If additional station data is required, submit the station request to NRSS no later than the last day of April. If data from certain stations are no longer required, send a list of these stations to the individual(s) listed in Section 4 of this SOP.

To reiterate, for each station update, NRSS will do a complete replacement of the entire period of record for each station. Basic station metadata will also be collected.

## 2. Obtain CDB\_Codes

There are two ways to obtain CDB codes. One option is to search for stations using the web-based tool. The other options is to connect directly to the database.

### 2.1. Web Interface

The web Interface is located at:

[http://inp2300fcvalcab/Reports/Pages/Report.aspx?ItemPath=%2fNPS\\_Climate\\_Database%2fMAIN](http://inp2300fcvalcab/Reports/Pages/Report.aspx?ItemPath=%2fNPS_Climate_Database%2fMAIN)

Select the 'Browse the Entire Station Inventory' option

## THE NPS CLIMATE DATABASE

[Click here for instructions](#)

BROWSE THE ENTIRE STATION INVENTORY

GET DAILY STATION DATA

MANAGEMENT OPTIONS

and locate stations that have not been requested (i.e., Request Status = Can Request).

SQL Server Reporting Services  
Home > NPS\_Climate\_Database >  
**StationsInDatabase**

View Properties History Subscriptions

New Subscription

Climate Data Source: --- ALL SOURCES--- Filter For Stations With Data: Show All Stations

1 of 2 ? 100% Find | Next Select a format Export

STATION COUNT: 41259

CDB Code	Request Status	Source	Station Name	Station Code	Version Count	Version Info
CDB_S_879	Can Request	Stream Gage		0629400	0	View
CDB_S_877	Is Requested	Stream Gage		401707105395000	1	View
CDB_S_876	Is Requested	Stream Gage		05013900	1	View
CDB_S_47043	Can Request	Stream Gage	G -3764	251241080385301	0	View
CDB_S_49129	Can Request	Stream Gage	1N 7E 8DBCC2	440326103180702	0	View
CDB_S_49131	Can Request	Stream Gage	2N 7E32ABBC2	440544103180002	0	View
CDB_S_49130	Can Request	Stream Gage	2N 7E32ABBD	440544103180001	0	View
CDB_S_48686	Can Request	Stream Gage	3N 40W16BBB 1 LAMONT	401401101510701	0	View
CDB_S_49142	Can Request	Stream Gage	4N 6E19AABA	441759103261201	0	View
CDB_S_49143	Can Request	Stream Gage	4N 6E19AABA2	441759103261202	0	View
CDB_S_49144	Can Request	Stream Gage	4N 6E19AABA3	441759103261203	0	View
CDB_S_48732	Can Request	Stream Gage	7N 38W29CBB 1 IMPERIAL	403235101395501	0	View
CDB_S_47631	Can Request	Stream Gage	K 107 MTG-3	322047086214301	0	View
CDB_S_47679	Can Request	Stream Gage	L- 26	324141092390501	0	View
CDB_S_47646	Can Request	Stream Gage	L- 68	323458092275101	0	View
CDB_S_43408	Can Request	Stream Gage	White River at Georgetown, AR	07076750	0	View
CDB_S_48754	Can Request	Stream Gage	(C- 2- 4)15cac-S1 MILL SPRING NR ERDA, UT	403835112171801	0	View
CDB_S_48597	Can Request	Stream Gage	(C-13-18)33ddc- 1	393814113522601	0	View

## 2.2. Query From Database

Another option is to connect to and query from the Climate Database. To obtain the unique CDB\_Codes, you will first need to connect to the climate database (See <https://nrinfo.nps.gov/Reference.mvc/Profile?Code=2167699>).

IMD will pull data for all stations found in the 'StationsInDatabase' view where the 'RequestStatus' is anything but 'Data Not Available'.

```
SELECT [CDB_Code]
      , [RequestStatus]
      , [SourceCode]
      , [SourceName]
      , [StationCode]
      , [StationName]
      , [VersionCount]
      , [UnitList]
      , [StartDate]
      , [EndDate]
FROM [viewer].[StationsInDatabase]

WHERE RequestStatus <> 'Data Not Available'
```

Note that you can alternatively use the 'StationLocations' view.

	CDB_Code	RequestStatus	SourceCode	SourceName	StationCode	StationName
1	CDB_S_665	Is Requested	COOP	COOP	240642	Belly River RS
2	CDB_S_666	Is Requested	COOP	COOP	241202	Browning 48.559
3	CDB_S_667	Is Requested	COOP	COOP	241297	Busby
4	CDB_S_668	Is Requested	COOP	COOP	241995	COOKE CITY 2 W
5	CDB_S_682	Is Requested	COOP	COOP	244330	Hungry Horse RS
6	CDB_S_683	Is Requested	COOP	COOP	245106	Lodge Grass
7	CDB_S_684	Is Requested	COOP	COOP	246218	Olney
8	CDB_S_685	Is Requested	COOP	COOP	246615	Polebridge
9	CDB_S_698	Is Requested	COOP	COOP	249240	YELLOWTAIL DAM
10	CDB_S_699	Is Requested	COOP	COOP	480140	ALTA
11	CDB_S_700	Is Requested	COOP	COOP	481840	CODY
12	CDB_S_701	Is Requested	COOP	COOP	485770	LOVELL
13	CDB_S_869	Is Requested	Stream Gage	Stream Gage	401723105400000	ANDREWS CREEK-LOCH \
14	CDB_S_882	Is Requested	Stream Gage	Stream Gage	12355500	N F Flathead River nr Colum
15	CDB_S_883	Is Requested	Stream Gage	Stream Gage	06278500	SHELL CREEK NEAR SHEI
16	CDB_S_884	Is Requested	Stream Gage	Stream Gage	13010065	SNAKE RIVER AB JACKSO
17	CDB_S_885	Is Requested	Stream Gage	Stream Gage	13013650	SNAKE RIVER AT MOOSE

If you see a request status of 'Is Requested', you can optionally ignore these stations for your request since data will automatically be pulled.

If you only want to see stations that have not been requested, then change your query to the following:

```
SELECT [CDB_Code]
      , [RequestStatus]
      , [SourceCode]
      , [SourceName]
      , [StationCode]
      , [StationName]
      , [VersionCount]
      , [UnitList]
      , [StartDate]
      , [EndDate]
FROM [viewer].[StationsInDatabase]

WHERE RequestStatus = 'Can Request'
```

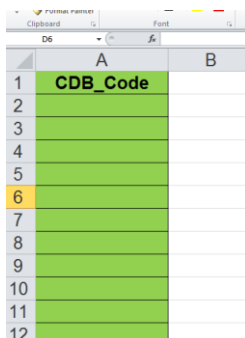
### 3. Prepare List of CDB Codes

Enter the CDB\_Codes in the attached MS Excel spreadsheet:

<https://irma.nps.gov/App/Reference/Profile/2166927>

Create a copy of the spreadsheet and name it Wx\_RequestForm\_[UnitCode]\_[FirstInitialLastName].xlsx. For example, if Brent Frakes were making the request for ROMN, the submitted file would be Wx\_RequestForm\_ROMN\_BFrakes.xlsx

The first field - CDB\_Code - must be completed in order for the request to be accepted. Do not enter values in the other fields (columns B through F) – these are for IMD processing



	A	B
1	CDB_Code	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

## 4. Submit List of Requested Stations

Email the Excel file containing the required information for the requested stations to the following:

Brent Frakes ([brent\\_frakes@nps.gov](mailto:brent_frakes@nps.gov))

## 5. Updating the Station Request Status in Database

IMD staff will load the Excel file containing the requested stations into the Database.

### 5.1. Steps

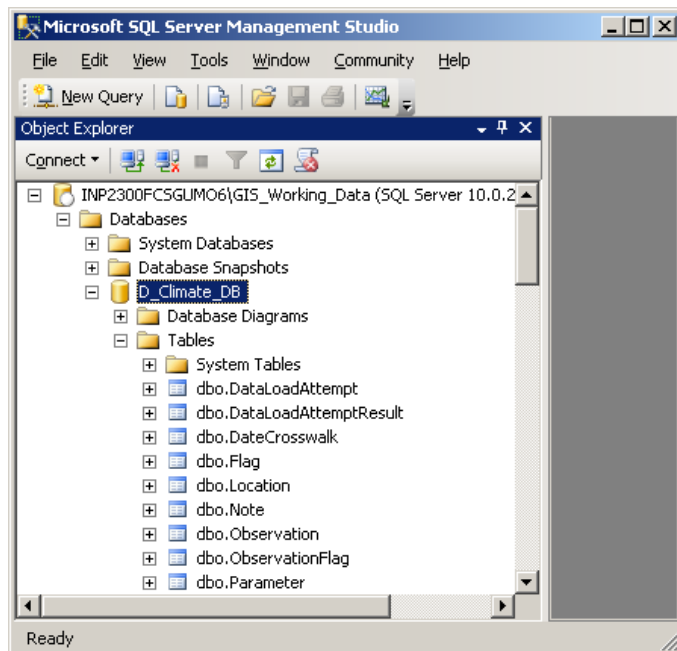
#### 5.1.1. Open SQL Server Management Studio

Start SQL Server Management Studio and select the following server:

**INP2300FCSGUMO6\GIS\_Working\_Data**



All tables and stored procedures for this process are found under the “**D\_Climate\_DB**” database.

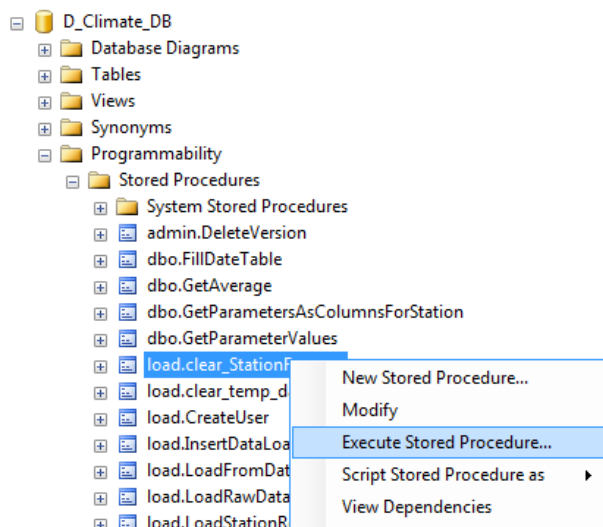


### 5.1.2. Clear Station Request

To clear the station request, expand nodes as follows:

Databases>D\_Climate\_DB>Programmability>Stored Procedures. Right-click the Stored Procedure named **load.clear\_StationRequest** and select ‘Execute Stored Procedure’.

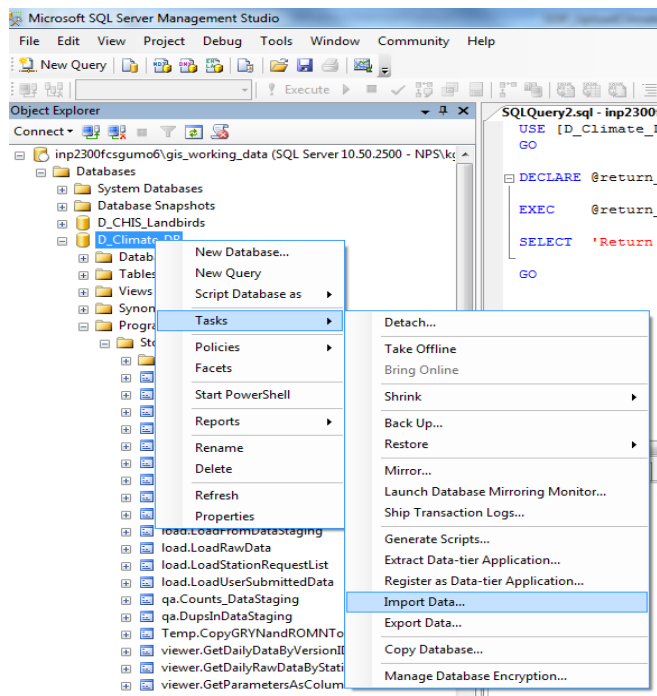
Click OK to clear the records from the staging table. Close the query window.



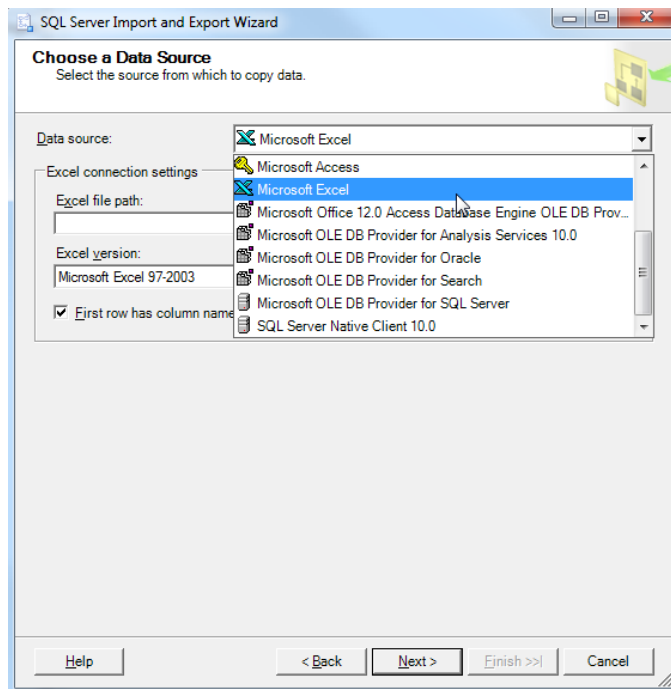


### 5.1.3. Load Data To Staging Table

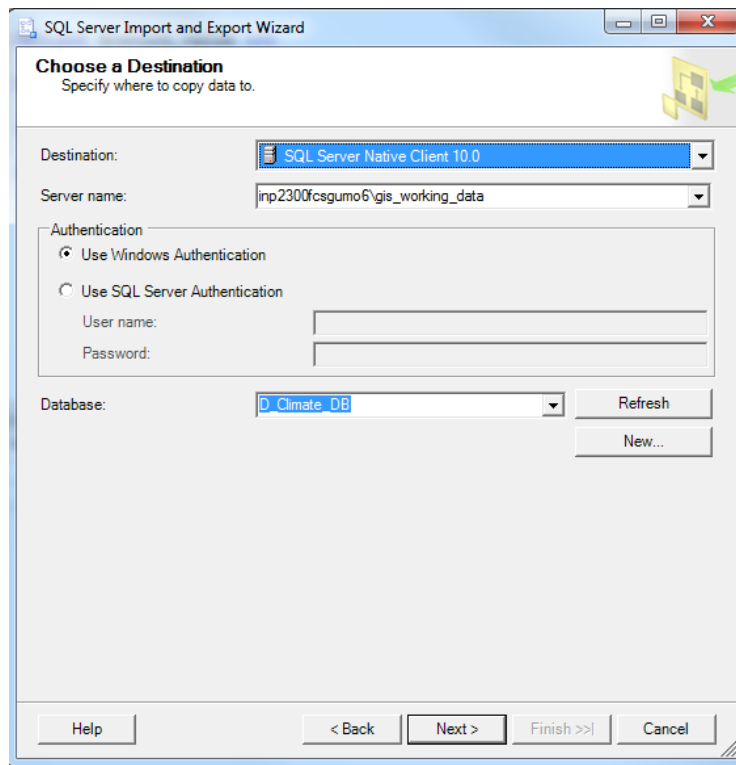
Right-click on the Climate Database named **D\_Climate\_DB** and select Tasks> Import Data.



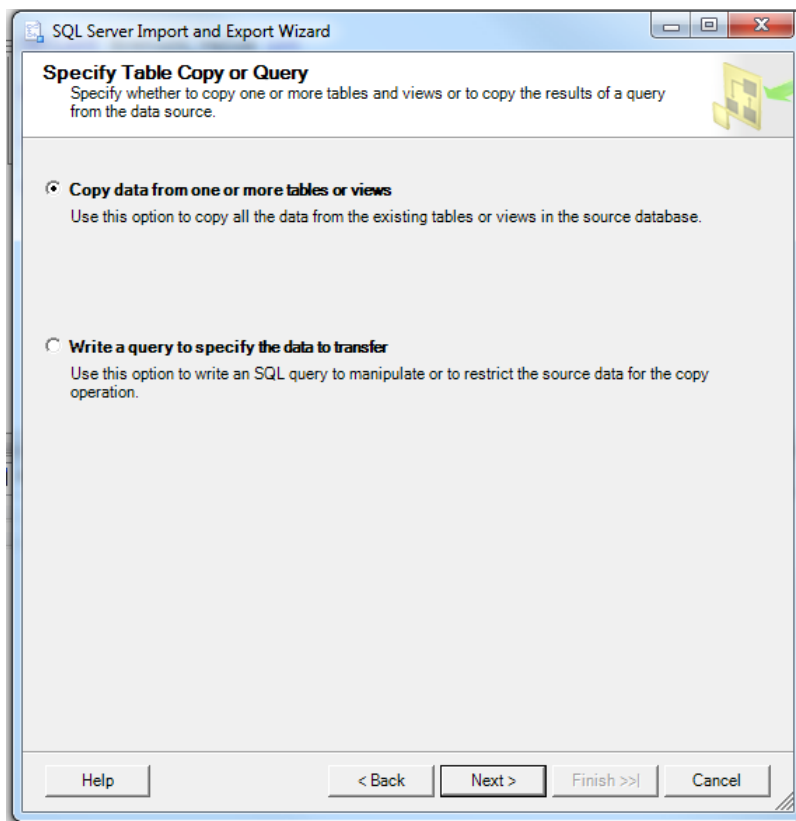
On the 'Choose a Data Source' step, select **Microsoft Excel** on the Data Source drop-down list. Then click the Browse button, select the **requested Excel file** and click Open. Make sure the checkbox for "First row has column names" is checked and then click **Next**.



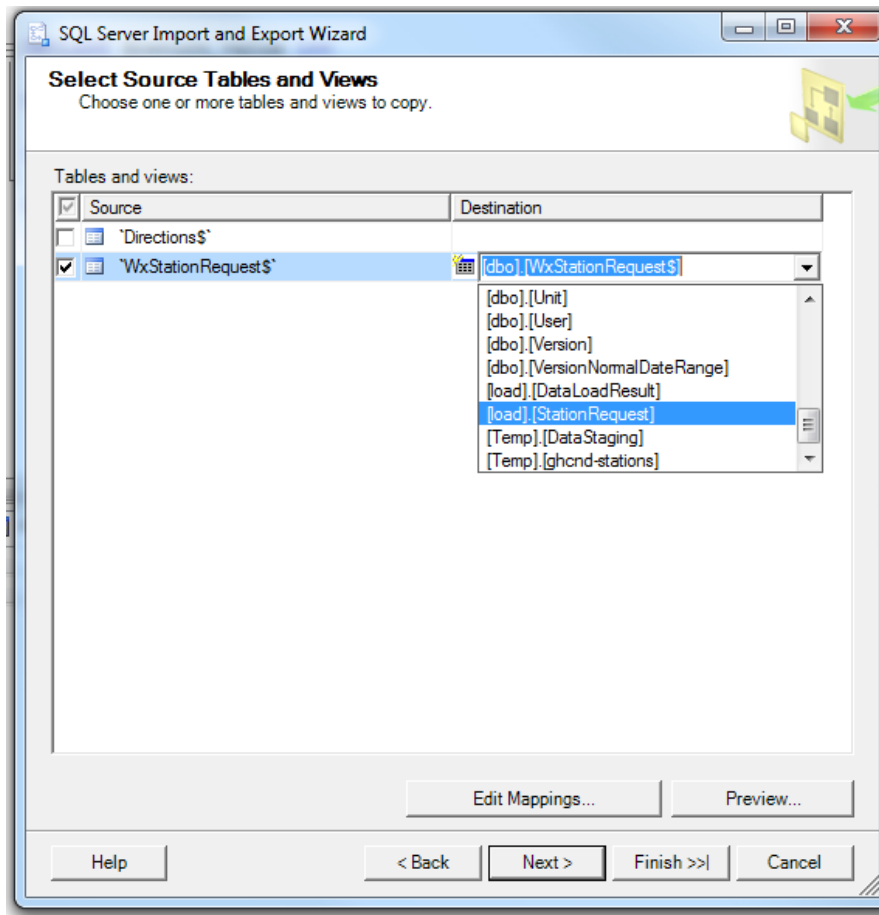
Accept the default choices on the 'Choose a Destination' step by clicking **Next**.



Select the "Copy data from one or more tables or views" option and click **Next**.

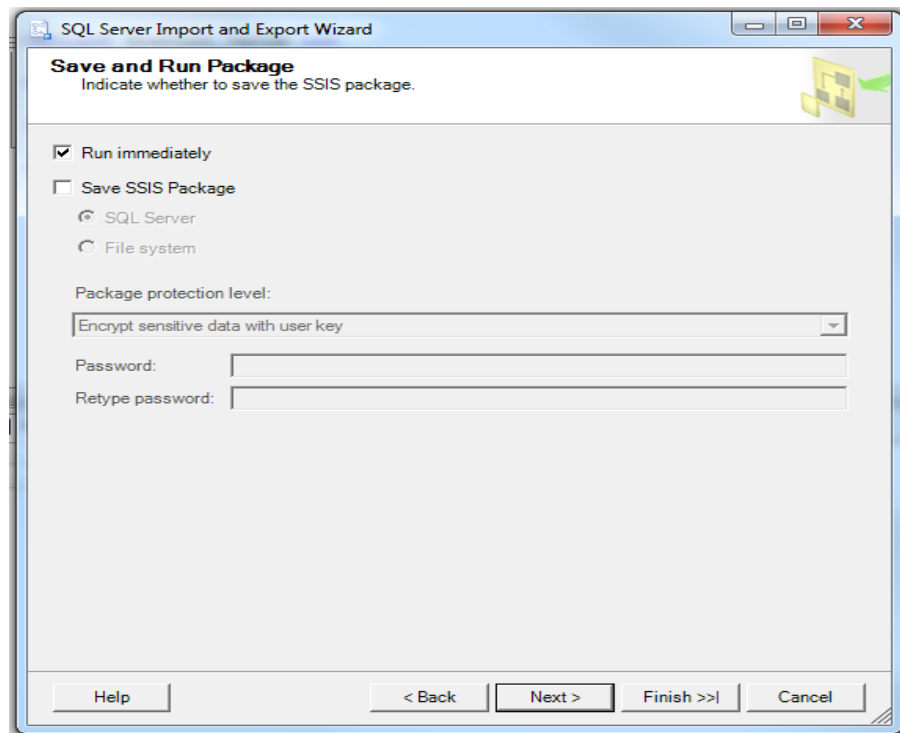


In the 'Select Source Tables and Views' window, checkmark the source **'WxStationRequest\$'**. Then under the Destination column, click directly on the **[dbo].[WxStationRequest\$]** name. From the drop down list, click on **[load].[StationRequest]**. Click **Next**.



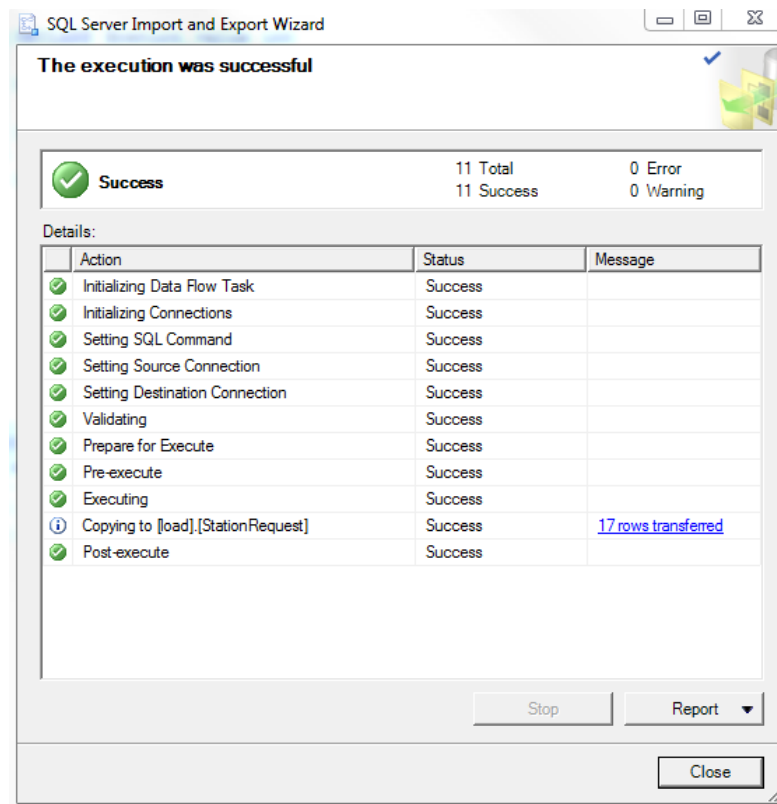
Click **Next** on the 'Review Data Type Mapping' window.

On the 'Save and Run Package' window, checkmark **Run Immediately**. Click **Next**.



Click **Finish** on the 'Complete the Wizard' window.

If the wizard was successful, you should get a screen like this:

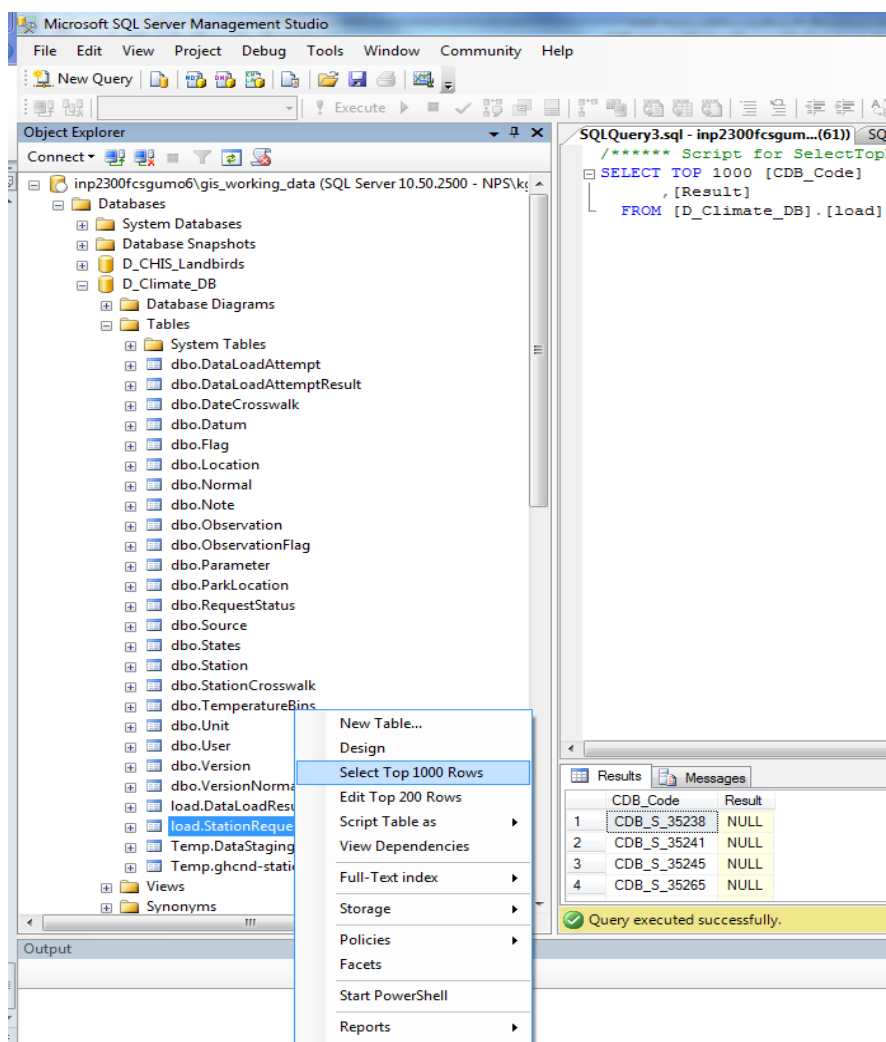


If the file was loaded successfully, close the window.

If there are errors or warnings listed in the Status column of the final window, investigate them, make any necessary corrections, clear the **load.clear\_StationRequest** table, and import the data again.

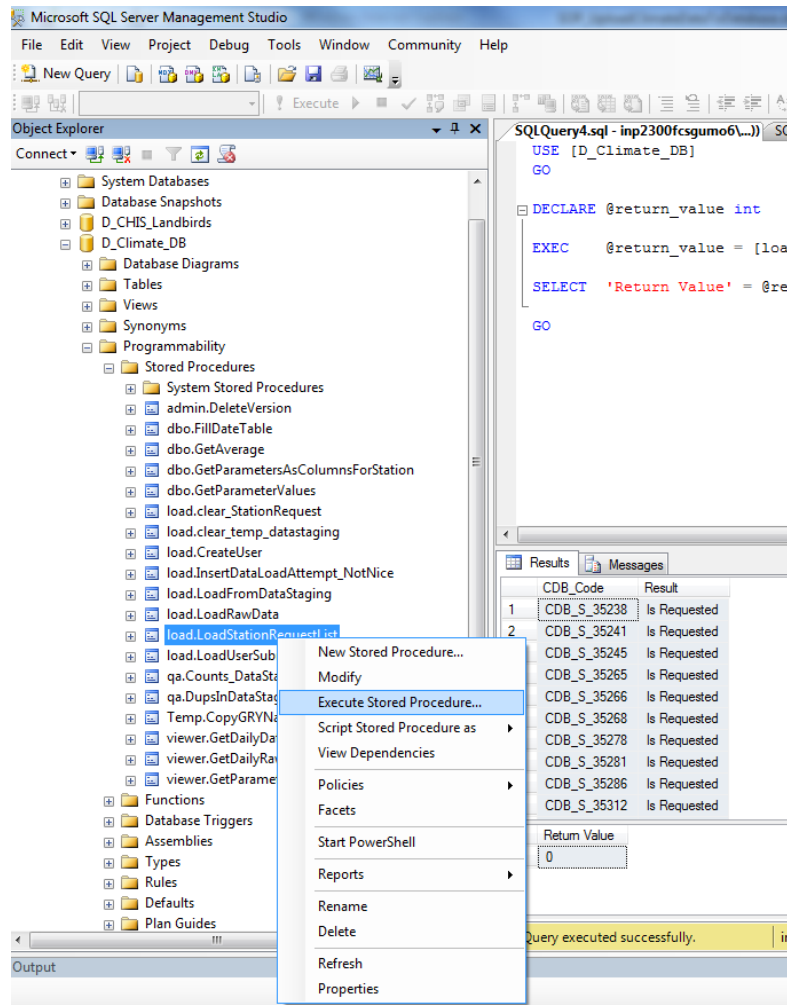
## 5.2. Check If Records Are In Table

Expand the Tables node and right click on the table **load.StationRequest** and select 'Select Top 1000 rows' to show that there are records in the table.



### 5.3. Update Station Table

Under the Programmability>Stored Procedures node, right-click the **load.LoadStationRequestList** stored procedure and select 'Execute Stored Procedure' and click **OK**.



## 6. Follow Up

A table of results will be displayed in the middle of the page. IMD staff will then copy the output from the Results section and paste it into a confirmation email letting the sender know that the request was successful.

